ECON 165, Section # 3

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Plan for Today

▶ Meztler Diagrams

▶ Large Open Economies

▶ Mid-quarter evaluations

Investment

1. Investment $= I_1(r_1; A_2)$ where:
    - ► r_1 is an equilibrium price that moves until equilibrium is achieved,
    - ► A_2 is an exogenous variable that falls from the sky

► Investment is:
    - Increasing/Decreasing in r_1? Why? **Decreasing:** Borrowing becomes more expensive (have to repay more) when $r_1 \uparrow$.
    - Increasing/Decreasing in A_2? Why? **Increasing:** Higher MPK, i.e. investment returns more output when $A_2 \uparrow$.

      Clearer from $\Pi_2 = A_2 F(I_1) - (1 + r_1) I_1$
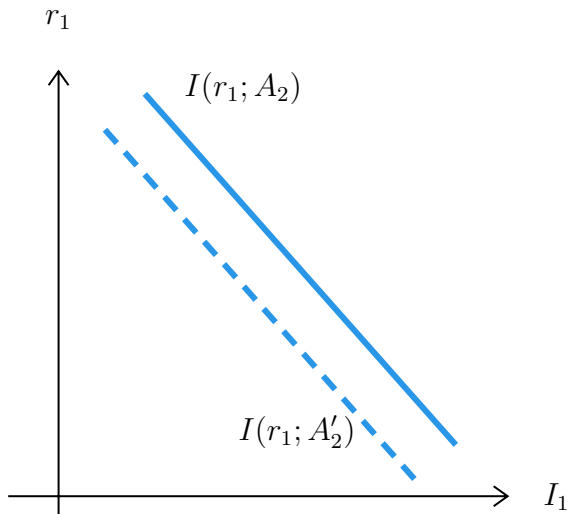
Investment Schedule

Figure: Investment Schedule

Handwritten annotation (right side):

because the MARGINAL PRODUCT of CAPITAL tomorrow is lower ↑ & so you want to invest less

- $A_2 > A_2'$

or

- $A_2 < A_2'$

Savings, pg. 1

▶ What are the household's key equations?

$$U'(C_1) = \frac{\beta U'(C_2)}{1 + r_1} \qquad \text{(EE)}$$

$$C_2 = (1 + r_1)(\overline{Y} - C_1) \qquad \text{(BC)}$$

2. Consumption $= C_1(r_1; A_1, A_2)$ where:

▶ Consumption is:
- Increasing/Decreasing in r_1? Why? **Decreasing.**
- Increasing/Decreasing in A_1? Why? **Increasing.**
- Increasing/Decreasing in A_2? Why? **Increasing.**

(handwritten annotation) an $r_1 \uparrow$ $u'(c_1) \downarrow$ and since $u''(c_1) > 0$ $\Rightarrow C_1 \downarrow$

(handwritten annotation) you're effectively richer so you consume more

Savings, pg. 2

3. Output = $Y_1(A_1)$ where:

▶ Output is:
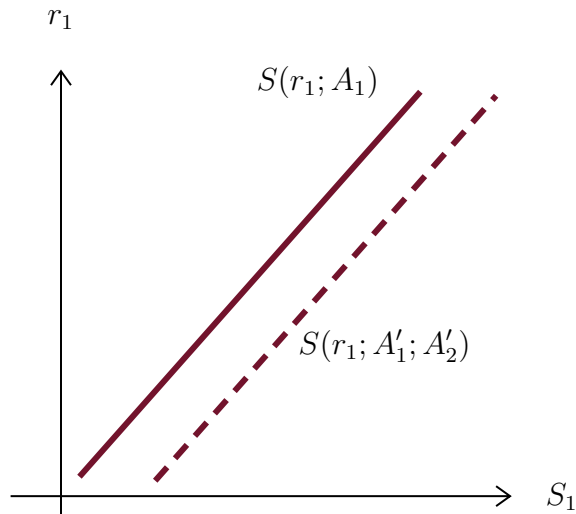   - Increasing/Decreasing in A_1? Why? **Increasing.**

4. Savings $S_1(r_1; A_1, A_2) = Y_1(A_1) - C_1(r_1; A_1, A_2)$.

▶ Savings are:
   - Increasing in r_1.
   - Decreasing in A_2.
   - Increasing/Decreasing in A_1? Why? **Increasing.**

↳ consumption smoothing behavior
  makes you want to spread
  you gain over both periods
  ⟹ ↑ in savings

Savings Schedule

- What pushed from solid to dashed?

$A_1' > A_1$ or $A_2' < A_2$

Figure: Savings Schedule

Investment Schedule

r_1

$I(r_1; A_2)$

$S(r_1; A_1, A_2)$

a

c

b

CA > 0 since SAVINGS > INVESTMENT

in closed economy SAVINGS = INVEST.

- Where can a closed economy be?

- What happens to CA at each point?

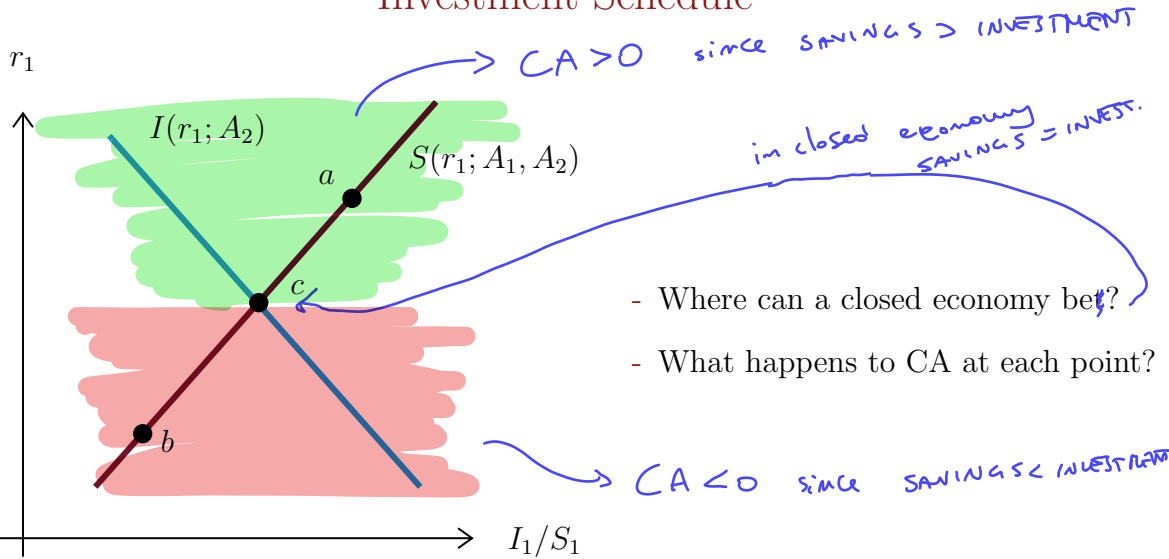CA < 0 since SAVINGS < INVESTMENT

I_1/S_1
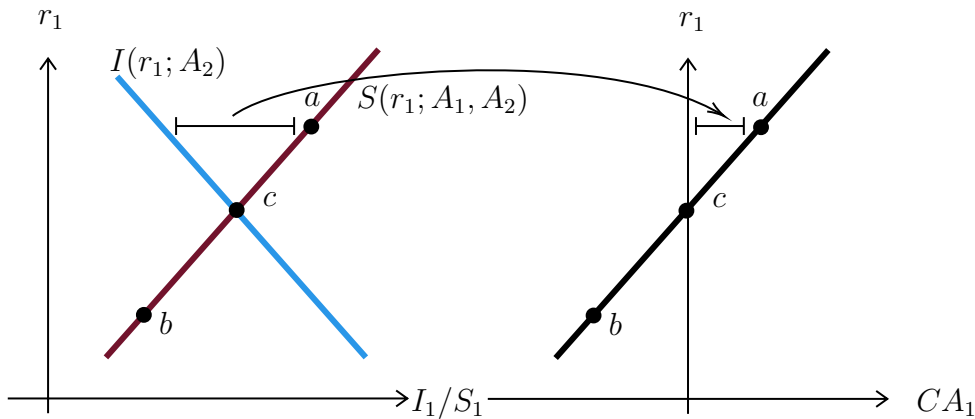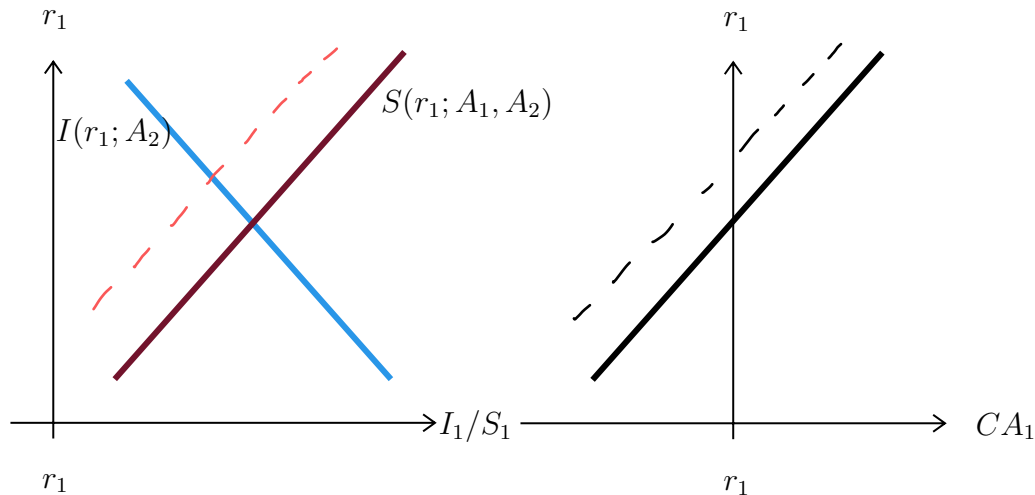
Figure: Equilibria

Metzler Diagram

Figure: Metzler Diagram

Practice Problem

What happens to CA_1 if workers become more impatient ($\downarrow \beta$)?

Large Open Economies

▶ Why are large open economies different from small open economies? What changes in what we have done so far? ⟿

▶ Large open economies' actions affect prices! Can no longer take r as given, r is affected by all other decisions.

Large Open Economies: Setup

▶ We often think of two countries (e.g. US and RoW)

▶ What do we know about the relationship between their CAs?

$$CA_1^{US} + CA_1^{RoW} = 0$$

▶ What is the **autarky interest rate**? Simply enough, it's the equilibrium interest rate there be if the country were in autarky.

→ Where the interest rate r is relative to the autarky interest rate r^* is important.
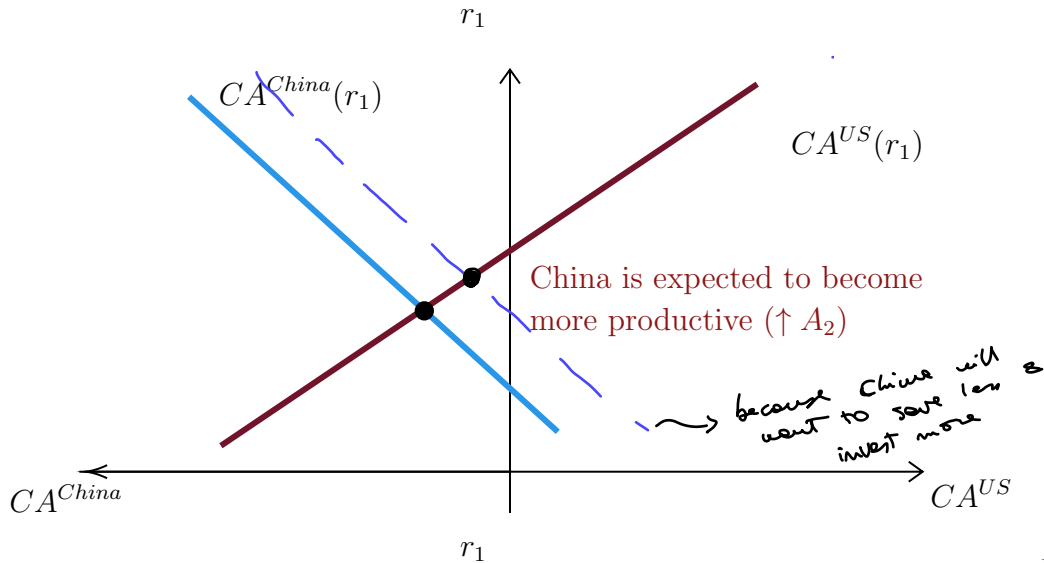
Meztler in Large Economies

$CA^{RoW}(r_1)$

$CA^{US}(r_1)$

r_1

Where is the US' r*?
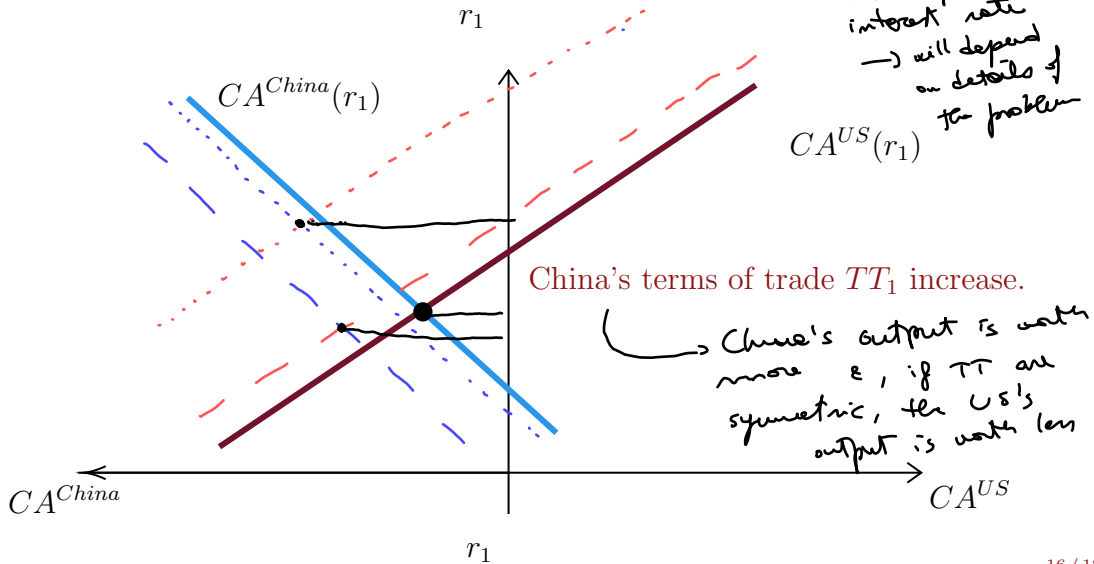
Where is the RoW's r*?

CA^{RoW}

CA^{US}
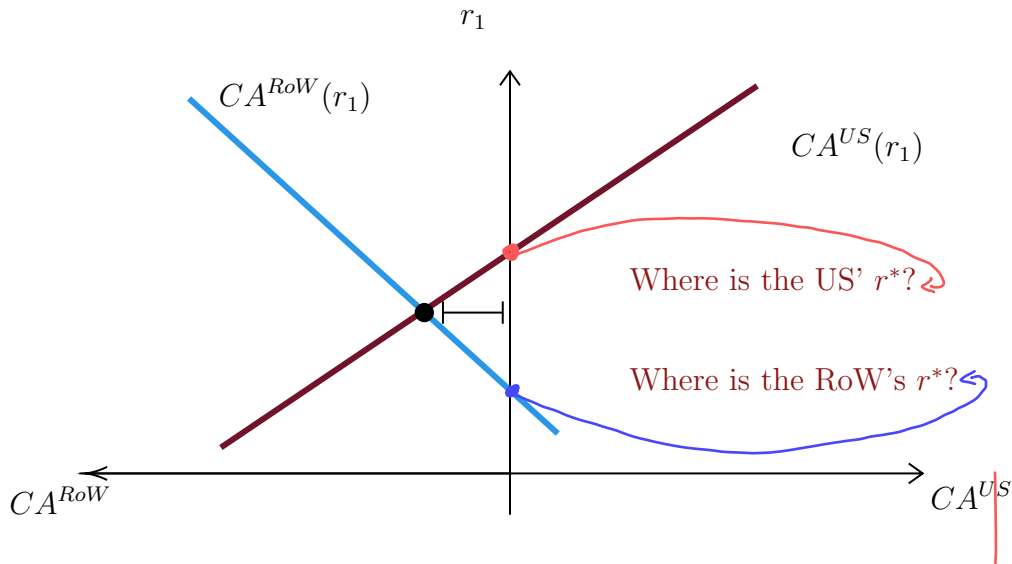
r and r^*

▶ At $r = r^*$ we are in autarky and the $CA = 0$,

▶ If $r < r^*$ (as in US above) this induces a country to invest more and save less, i.e. the CA falls. This means that if $r < r^*$, the $CA < 0$,

▶ If $r > r^*$ (as in RoW above) this induces a country to save more and invest less, i.e. the CA increases. This means that if $r > r^*$, the $CA > 0$.

Practice #2

r_1

$CA^{China}(r_1)$

$CA^{US}(r_1)$

China is expected to become more productive ($\uparrow A_2$)

because China will want to save less & invest more

CA^{China}

CA^{US}

r_1

Practice #3

r_1

$CA^{China}(r_1)$

multiple possible
new equilibrium
interest rate
→ will depend
on details of
the problem

$CA^{US}(r_1)$

China's terms of trade TT_1 increase.

→ China's output is worth
more & if TT are
symmetric, the US's
output is worth less

CA^{China}

CA^{US}

r_1

Evaluation

Q&A